[025] The core 12 is formed from extruded tubes, of circular cross-section. The material of the core 12 is polyetherimid, which may, for example comprise Trauma-Lite Honeycombs Type PEI 3.5-70 supplied by Trauma-Lite Limited, PO Box 456, Manchester M62 LL, United Kingdom. In this material, the diameter of the tubes is 1. 37 inches (3.5 mm) and the material density is 4.37 lbs per cubic ft (70 kilos per cubic metre). This material can be thermoformed at temperatures up to 338°F (170°C).

[026] The skins 14 and 16 may comprise Cetex GI0303 reinforced thermoplastic laminate, supplied by Ten Cate Advanced Composites, Campbellweg 30, 7443 PV Nijverdal, Netherlands. This material is in accordance with Boeing Aircraft Corporation's Material Specification BMS8-353 and can be thermoformed at temperatures in the range 302°F (150°C) to 572°F (300°C).

[027] The thermoplastic adhesive may be a polyester based thermoplastic web such as Sharnet Web Sh4275 supplied by Bostic Findley Limited, Alderscote Road, Leicester LE4 68W, England. This has a fusion temperature of 266°F (130°C) .

[028] Consequently, the preferred temperature for bending and shaping composite material made from these materials is 302°F (150°C).

[033] The platens 20 and 26 are then heated to a temperature above the fusion temperature of the adhesive layers (302°F (150°C) for the materials described above) and the press is closed to the position shown in Figure 5. The force exerted by the platens 20 and 26 causes each end of the tubes forming the core 34 to be distorted so as to bridge the interstices between adjacent tubes and increase the surface area available to make contact with the adjacent skin, as shown in Figure 6. This produces a stronger bond between the core and its skins than is obtained with a panel of the type shown in Figures 1 to 3.

1-15. (CANCELED)

16. (NEW) A composite sheet material comprising:

a core (34) of honeycomb cellular material having a first and a second side and an initial thickness; and

a first skin of continuous sheet material on the first side and a second skin of continuous sheet material on the second side of side, with the first and the second skins each having an initial thickness;

the core (34) and the first and the second skins (32, 36) are formed of thermoplastic materials;

the composite sheet material being uniformly compressed to a thickness less than a sum of an initial thicknesses of the core (34), the first skin (32) and the second skin (36) while at a temperature higher than the softening temperature of the core (34).

17. (NEW) The composite sheet material according to claim 16, wherein the first and the second skins (32, 36) are secured to the core (34) using a separate thermoplastic adhesive.

18. (NEW) The composite sheet material according to claim 17, wherein a fusion temperature of the thermoplastic adhesive is less than that of the core (34), the first skin (32) and the second skin (36).

19. (NEW) The composite sheet material according to claim 16, wherein the honeycomb cellular core is formed from extruded tubes.

20. (NEW) The composite sheet material according to claim 19, wherein the extruded tubes have circular cross-section.

21. (NEW) The composite sheet material comprising:

a core (12, 34) of honeycomb cellular material having an initial thickness; and

a first skin of continuous sheet material on the first side and a second skin of continuous sheet material on the second side of side, and the first skin (14, 32) and the second skin (16, 36) each having an initial thickness;

the core (12, 34) and the first and the second skins (14, 16; 32, 36) are formed of thermoplastic materials;

the first and the second skins (14, 16; 32, 36) are attached to the core (12, 34) by a thermoplastic adhesive having a fusion temperature less than a

fusion temperature of the core (12, 34) and the first and the second skins (14, 16; 32, 36).

22. (NEW) The composite sheet material according to claim 16, wherein fusion temperatures of the core (12, 34) and the first and the second skins (14, 16; 32, 36) are approximately equal.

23. (NEW) The composite sheet material according to claim 16, wherein the core (12, 34) has a lower fusion temperature than a fusion temperature of the first skin (14, 16) and a fusion temperature of the second skin (32, 36).

24. (NEW) A method of bending composite sheet material comprising a core (34) of honeycomb cellular material having a first and a second side and an initial thickness, and a first skin of continuous sheet material on the first side and a second skin of continuous sheet material on the second side of side, the first and the second skins each having an initial thickness, the core (34) an the first and the second skins (32, 36) are formed of thermoplastic materials, the composite sheet material being uniformly compressed to a thickness less than a sum of an initial thicknesses of the core (34) and the first and second skins (32, 36) while at a temperature higher than the softening temperature of the core (34), the first and the second skins (32, 36) are secured to the core (34) using a separate thermoplastic adhesive, and the method comprising the steps of:

heating the sheet material to a temperature above a fusion temperature of the thermoplastic adhesive;

bending the sheet material to a required shape; and

holding the sheet material in the required shape while the sheet material cools to a temperature below the fusion temperature of the thermoplastic adhesive.

25. (NEW) The method according to claim 24, further comprising

locating a first layer of thermoplastic adhesive between the first layer of thermoplastic sheet material (32) and the layer of cellular material (34);

locating a second layer of thermoplastic adhesive between the layer of cellular material (34) and the second layer of thermoplastic sheet material (36); and

heating the press platens (20, 26) to a temperature above the fusion temperature of the adhesive.